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THE PRESENT POSITION OF INFANT MORTALITY:
ITS RECENT DECLINE IN THE UNITED STATES.BY HENRY HORACE HIBBS, JR., *Sometime Fellow in Research, Boston
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The term infant mortality, according to the generally accepted usage, is employed to designate the deaths of infants under one year of age. The problem is measured by an infant mortality rate which is an expression of the proportion of infants dying under one year of age to 1,000 births or, when birth statistics are not available, to 1,000 population under one year of age. The deaths of infants at this early age is made the object of special study because they constitute such an enormous proportion of the deaths at all ages. In no other period of life do deaths occur with such frequency. This is evident upon examination of any of the bulletins on mortality statistics issued annually by the Bureau of the Census for the registration area of the United States. Thus, Bulletin 109 shows that 27 per cent. of the total number of deaths which occurred in the registration area in 1910 were of children under five years of age and 19 per cent., or almost one fifth, were of infants under one year of age. In 1911, 1912, and 1913 the deaths of infants constituted 18 per cent. of the deaths at all ages.

That the death rate for infants and young children should be greater than for other persons is not, however, surprising. As a recent English writer says, "The young of all animals are more susceptible than the adult to the influence of the environment and the approach of death. Hence, it is inevitable that, even under the most favourable circumstances the deaths of infants will furnish a large contribution to the bills of mortality."* It is not the mere fact of excess but the tremendously greater excess of deaths which occur during the first year of life that constitutes the problem of infant mortality.

Infant Mortality in Foreign Countries. The world-wide significance of the problem will be evident upon examination

* George Newman, M.D.: *Infant Mortality*. London, 1906, p. v.

of the following figures showing the infant mortality rate per 1,000 births for the foreign countries for which statistics are available during the five year period from 1906 to 1910:*

Chile.....	315	Finland.....	117
Hungary.....	204	Switzerland.....	115
Jamaica.....	191	The Netherlands...	114
Ceylon.....	189	Scotland.....	112
Prussia.....	168	Denmark.....	108
Servia.....	154	Ireland.....	94
Italy.....	153	Sweden.....	78
Belgium.....	141	Australian Common-	
Ontario.....	127	wealth.....	78
France.....	126	Norway.....	70
England and Wales	117	New Zealand.....	70

Thus, in one third of the countries of the world for which statistics are available the infant mortality rate was over 150, while in about one half it was over 125. In only 5 of the countries, 3 in Europe and 2 in Australasia, was the rate less than 100 deaths per 1,000 births. Expressed in another way this means that, out of every 1,000 children born in countries like Hungary, Prussia, and Italy, from 150 to 200 die before reaching the end of the first year of life; out of every 1,000 born in countries like England, Scotland, Switzerland, and The Netherlands, from 110 to 120 die before reaching this age; while in countries like Ireland, Sweden, Norway, and Australia, from 70 to 100 die before they are a year old.

Infant Mortality in the United States. Figures comparable with these exist for only a few of the states and cities of the United States. In 1911 the Bureau of the Census reported that only in the cities of Washington and New York and in the states of Pennsylvania and Michigan and the six New England States could the registration of both births and deaths be regarded as sufficiently complete (amounting to at least 90 per cent. of the total) to make possible the calculation of an accurate rate of infant mortality based on the ratio of births to deaths. This area comprises the provisional "registration

*Seventy Third and Seventy Fourth Annual Reports of the Registrar General for Births, Deaths, and Marriages in England and Wales (pp. xciv and 105-15 respectively).

area" of the United States for births and deaths. The infant mortality rates per 1,000 births for these states and cities in 1910 were as follows:

Rhode Island.....	158	Connecticut.....	127
New Hampshire....	146	Michigan.....	124
Pennsylvania.....	140		
Maine.....	135	Washington, D. C.	152
Massachusetts....	131	New York, N. Y..	125

Besides these states and cities where the registration of both births and deaths are regarded by the census office as being sufficiently or "fairly complete," there are others where the registration of deaths only is regarded as sufficiently complete to be included in what is known as the registration area for deaths. In 1910, 22 entire states and a large number of cities in non-registration states were included in this area. Since complete birth statistics are not available, it is not possible to calculate an infant mortality rate for this area in the ordinary manner—by computing the ratio of deaths to 1,000 births. To overcome this difficulty, the Bureau of the Census in its report on mortality statistics for 1910 employed an infant death rate based on the proportion of deaths to 1,000 population under one year of age in 1910. This method is confessedly inaccurate because the enumeration of the population under one year of age is never complete and entirely accurate. Yet it is the best method available for studying the distribution of infant mortality in the United States and, although its crudities should serve as a caution against drawing too fine conclusions from its use, its defects should not be over-emphasized. The following table shows the death rate per 1,000 population under one year of age for the registration states:*

Utah.....	82.3	Ohio.....	115.9
Washington....	84.3	Michigan.....	127.5
Kentucky.....	87.9	Maine.....	140.4
Montana.....	90.4	New York.....	143.6
California.....	92.2	Connecticut...	143.7
Minnesota.....	92.4	New Jersey....	148.8

* Bureau of the Census: Bulletin 112, p. 24.

Missouri.....	*96.7	Pennsylvania..	149.7
Colorado.....	104.5	Maryland.....	152.1
Indiana.....	106.9	Massachusetts..	160.8
Wisconsin.....	108.0	New Hampshire	164.9
Vermont.....	109.4	Rhode Island..	181.5

Thus the infant death rate per 1,000 population varied from less than 85 in the Western states, Utah and Washington, to 165 and 182 in the two New England states, Rhode Island and New Hampshire. It was 127.6 for the entire group of registration states considered as a whole.

It would be of interest to compare the rates for this group of states with those for foreign countries given in a previous table. But this is, of course, impossible since infant death rates based on population can not be compared with the true infant mortality rate based on births. In the 1911 bulletin on "Mortality Statistics," the Bureau of the Census estimated on the basis of the figures quoted here and others, that the infant mortality rate per 1,000 births for the United States as a whole was about 124. Comparing this estimate with the computed rates for the foreign countries given in the preceding table, it will be seen that the rate of infant mortality in the United States is lower than in such countries as Chile, Hungary, Jamaica, Prussia, Servia, and Italy; about equal to the rate for the province of Ontario and for France; higher than the rate for England and Wales, Scotland, Finland, Switzerland, and Denmark; and considerably higher than the rate for Ireland, Sweden, Norway, New Zealand, and the Australian Commonwealth.

The figures quoted in the previous table also are of value in that they show the relative position of infant mortality in the different states and sections of the United States. The states included in the registration area are arranged in an ascending order according to their infant death rates. An examination of this table at once reveals the fact that in general the lowest rates are to be found in the Western and the highest in the Eastern states, with the rates for the North-Central (or Middle-Western) states in between. Thus, the

* Figures for deaths for 1911, first year of operation of state law.

average infant death rate for the 5 Western and Mountain states included was 91, for the 6 North-Central states, 108, and for the 9 New England and Middle-Atlantic states, 149.*

The same conclusion that in 1910 infant death rates were lowest in the Western part of the registration area and highest in the Eastern, with the Middle-West in between, is also to be drawn from an examination of the following table showing the infant death rate per 1,000 population under one year of age for the larger cities of the registration area:†

Oakland, Cal.	94.8	Dayton, Ohio.	146.8
Seattle, Wash.	100.4	Cleveland, Ohio. . . .	147.2
Portland, Ore.	105.3	Cincinnati, Ohio . . .	149.8
Los Angeles, Cal. . . .	110.7	Jersey City, N. J. . .	153.2
San Francisco, Cal. . .	113.6	New Orleans, La. . .	154.9
Toledo, Ohio.	125.0	Atlanta, Ga.	155.3
Cambridge, Mass. . . .	126.1	Bridgeport, Conn. . .	155.5
St. Paul, Minn.	130.8	Philadelphia, Pa. . . .	162.2
Birmingham, Ala. . .	133.0	Albany, N. Y.	162.9
Louisville, Ky.	134.0	Boston, Mass.	165.5
Denver, Col.	134.7	Worcester, Mass. . . .	168.0
Grand Rapids, Mich. .	134.8	Kansas City, Mo. . .	170.4
New Haven, Conn. . . .	134.9	Milwaukee, Wis. . . .	172.0
Nashville, Tenn. . . .	135.1	Providence, R. I. . . .	173.7
St. Louis, Mo.	135.8	Syracuse, N. Y.	176.4
Chicago, Ill.	139.5	Pittsburg, Pa.	179.6
Omaha, Neb.	140.0	Buffalo, N. Y.	180.9
Columbus, Ohio. . . .	140.4	Washington, D. C. . .	194.6
Spokane, Wash.	142.4	Detroit, Mich.	204.8
Indianapolis, Ind. . . .	144.8	Baltimore, Md.	209.6
Newark, N. J.	145.8	Richmond, Va.	229.3
New York, N. Y. . . .	146.2	Fall River, Mass. . . .	259.5
Paterson, N. J.	146.7	Lowell, Mass.	261.0

* As only 2 of the 16 Southern states were included in the registration area in 1910, no comparison of the incidence of infant mortality in this with other sections of the country is possible.

† Bureau of the Census: Bulletin 112—Mortality Statistics, p. 24.

The average infant death rate in 1910 per 1,000 population under one year of age was 115 for the 7 Western and Mountain cities included in the table, 149 for the 14 North-Central (or Middle-Western) cities, 165 for the 7 Southern cities, 162 for the 9 Middle-Atlantic cities, and 181 for the 8 New England cities.

This study of the position of infant mortality in the United States and foreign countries shows the seriousness and world-wide significance of the problem. It also shows how the infant mortality rate varies in different parts of the civilized world. Thus, the rate has been found to be much lower in Australia than in Europe. Among the European countries it was lowest in Norway, Sweden, Ireland, and Denmark and highest in Russia, Prussia, Hungary, and Italy. Turning to a single country, the United States, and substituting the use of the infant death rate per 1,000 population under one year of age for that of the infant mortality rate per 1,000 births, the same wide variation was revealed, the ratio of infant deaths to population being considerably less in the Western than in the Eastern parts of the registration area. Further examination of the tables also showed that the ratio varies just as widely when the cities of any state or country are compared. The examination of the report of the health department of almost any city that requires the registration of births and deaths will reveal the same variation by wards—and even by blocks, if figures are given for such small areas.

This wide variation in rates of infant mortality for different countries, states, and cities constitutes a fact of fundamental importance in the study of the subject. Out of it arise questions that at once bring us face to face with the relationship between social and industrial conditions and infant mortality. Why this wide variation in the geographic distribution of infant deaths? Why is the infant death rate lower in one country than another, in certain cities of the same country than others, in certain wards of one city than in others? Why, indeed, should the death rate for little children in the first year of life so far exceed the rate for older children and adults? All of these questions require for their answer some knowledge of the causes of infant mortality and their rela-

tion to industrial, domestic, and social conditions. But with this aspect of the problem this paper cannot deal.*

The Recent Decline of Infant Mortality in Foreign Countries. Since 1881, the first year for which statistics are available for most countries, there has been a noticeable decline in infant mortality in most foreign countries and cities and, since 1900, in most of the states and large cities included in the registration area of the United States. The following table shows this decline for the principal foreign countries for which statistics are available:

PER CENT. OF DECREASE IN THE INFANT MORTALITY RATE PER 1,000 BIRTHS FOR THE PRINCIPAL FOREIGN COUNTRIES FOR WHICH STATISTICS ARE AVAILABLE BETWEEN 1881-85 AND 1906-10. (a)

Country.	1881-1885.	1906-1910.	Per Cent. of Decrease.
EUROPE			
Hungary.....	250 (b)	204	18.4
Prussia.....	207	168	18.8
Italy.....	185 (b)	153	17.3
Servia.....	157	154	1.9
Belgium.....	156	141	9.6
France.....	167	126	24.6
England and Wales.....	139	117	15.8
The Netherlands.....	181	114	31.5
Switzerland.....	171	115	32.7
Finland.....	162	117	27.7
Sweden.....	116	78	32.8
Scotland.....	117	112	4.3
Denmark.....	135	108	20.0
Ireland.....	94	94	0.0
Norway.....	99	70	29.3
AUSTRALASIA:			
The Commonwealth.....	125	78	37.6
New Zealand.....	90	70	22.2

(a) Seventy Third and Seventy Fourth Annual Reports of the Registrar General for Births, Deaths, and Marriages in England and Wales (p. xcix and pp. 105-15 respectively).

(b) Figures for 1881-85 not available: those given are for 1891-95.

The rate of infant mortality for every country included in the table declined during this period of 30 years with the single exception of Ireland where, although the rate for both periods remained the same, it was at a very low point—94 deaths

*In other recent articles the writer has discussed this question of the relation of social conditions to infant mortality. See "Infant Mortality and the Size of the Family," *QUARTERLY PUBLICATIONS OF THE AMERICAN STATISTICAL ASSOCIATION*, September, 1915; "Infant Mortality and Urban, Housing, and Living Conditions," *Journal of Sociologic Medicine*, October, 1915; "The Relation of Economic and Industrial Conditions to Infant Mortality," *Quarterly Journal of Economics*, November, 1915; and "The Influence of Prenatal Conditions on Infant Mortality," *Proceedings of the Southern Sociological Congress*, 1915.

per 1,000 births. The most notable decrease was in New Zealand and Australia. In the former the rate fell from the already low point of 90 deaths per 1,000 births to 70—a decrease of 22.2 per cent.—and in the latter from 125 to 78—a decrease of 37.6 per cent. The decline was also notable in Norway, Sweden, and Denmark and to a lesser extent in England and Wales. The absolute decrease was also great in Switzerland, the Netherlands, France, and Finland, but the rate was very high for each of these countries at the beginning of the period.*

The Registrar-general for England and Wales, from whose annual reports the preceding table was compiled, also gives figures showing the decline in the rate of infant mortality in the principal foreign cities since 1881–85. Space will not permit quotation of these in detail but the fact should be noted that in each of the cities included, with one exception (Trieste, Hungary), the rate of infant mortality declined during the period under consideration. The most notable decrease was in the three Dutch cities, Amsterdam, The Hague, and Rotterdam; the two Australian cities, Sydney and Melbourne; and the cities of Norway and Sweden, Stockholm and Christiania, in each of which the rate fell to a point below 100 deaths per 1,000 births—a record, as shown in the preceding table, also attained by each of the countries in which these cities are situated. The absolute decrease was also great in the two Prussian cities, Munich and Berlin, and the Hungarian city of Budapest, but the rate for each of these cities was very high at both the beginning and the end of the period.

The Decline in Infant Mortality in the United States. Unfortunately no series of infant mortality rates at all comparable with those just shown for foreign countries can be presented

* In view of the fact that, as has been frequently pointed out, the *apparent* decline in the rate of infant mortality in any country in a period of years may be affected by the increase in the per cent. of births which are registered, the figures given in the table may not in all cases be strictly comparable. For instance, if in three countries, in each of which the proportion of births registered in 1881 was 90 per cent., it should happen that the proportion registered should gradually increase in each *but unequally* so that in the first 92 per cent. of the births which occurred in 1910 were registered, and in the second 95 per cent., and in the third 99 per cent., the decline in the rate of infant mortality between these two years would not be strictly comparable unless the factor of varying perfection in birth registration were allowed for. This difficulty probably is not of sufficient importance to require its consideration here even if sufficient material bearing on the comparative efficiency of birth registration in foreign countries in the last thirty years were available.

for the United States. Figures are available, however, for Massachusetts and Boston for the same period, 1881-85, to 1906-10 and for three later years, 1911-13. Also, the per cent. of decrease in the infant death rate per 1,000 population under one year of age between 1900 and 1911 has been calculated by the Bureau of the Census for the registration area and the larger registration cities. The following table shows the decline in the infant mortality rate for Massachusetts and Boston since 1881 and the per cent. of decrease in the rate between 1881-85 and 1909-13:

PER CENT. OF DECREASE IN THE INFANT MORTALITY RATE PER 1,000 BIRTHS FOR THE COMMONWEALTH OF MASSACHUSETTS AND THE CITY OF BOSTON BETWEEN 1881-85 AND 1909-13. (a)

Years.	Massachusetts.	Boston.
1881-85.	160	186
1886-90.	161	178
1891-95.	161	167
1896-1900.	153	151
1901-05.	138	138
1906-10.	133	133
1909-13 (b)	121	120
Per cent. of decrease.	24.4	35.5

(a) Compiled from the Massachusetts annual reports on births, deaths, and marriages and the annual reports of the Health Department of Boston.

(b) Figures for five year period are not available.

It will be noted that the infant mortality rate in this period of thirty-three years decreased over 24 per cent. in Massachusetts and about 36 per cent. in Boston. It will also be noted that the decrease was especially marked during the past few years.

The nearest approach to an accurate determination of the position of infant mortality in the other states and cities of the United States is to be found in a table recently presented by the Bureau of the Census, and herewith reproduced in part, which shows the per cent. of decrease in the infant death rate per 1,000 population under one year of age between the census year 1900 and the calendar year 1911 for the states and large cities of the registration area. It should be noted, however, that the rates given in this table are infant death rates calculated upon the basis of infant deaths to 1,000 population under one year of age and not according to the usual method of the ratio of deaths to 1,000 births.

PER CENT. OF DECREASE IN THE INFANT DEATH RATE PER 1,000 POPULATION UNDER 1 YEAR OF AGE BETWEEN THE CENSUS YEAR 1900 AND THE CALENDAR YEAR 1911 FOR THE STATES INCLUDED IN THE REGISTRATION AREA IN 1900 AND FOR CITIES OF 400,000 POPULATION OR OVER. (a)

Area.	Census Year: 1900.	Calendar Year: 1911.	Per Cent. of Decrease.
States included in the registration area in 1900 (b)	159.3	129.5	19
Rhode Island	197.9	138.6	30
Massachusetts	177.8	143.3	19
New Hampshire	172.0	150.3	13
New Jersey	167.4	131.5	21
New York	159.8	128.8	19
Connecticut	156.8	130.9	17
Maine	144.1	110.9	23
Vermont	122.1	102.0	16
Michigan	121.3	111.4	8
Cities of 400,000 population or over in 1910. (c)			
Baltimore	235.1	189.2	20
Philadelphia	201.9	141.9	30
Detroit	201.2	168.8	16
Boston	194.1	160.9	17
New York	189.4	130.6	31
Cleveland	185.5	123.7	33
Pittsburg	179.8	141.4	21
St. Louis	162.4	123.8	24
San Francisco	152.2	104.8	31
Buffalo	150.9	140.6	7
Chicago	146.6	123.3	16

(a) Twelfth Annual Report of the Bureau of the Census on Mortality Statistics for the year 1911, p. 24.

(b) Includes District of Columbia.

(c) Space does not permit the quoting of rates for smaller cities.

From this table it will be noted that in this period of 11 years the ratio of infant deaths to 1,000 population under one year of age decreased nearly one fifth (19 per cent.) in this group of registration states. The largest decrease shown in the rate for any of the states was in that for Rhode Island (30 per cent.) and the least in that for Michigan (8 per cent.). In all the cities included in the table the infant death rate also showed a decline—ranging from 33 per cent. in Cleveland to 7 per cent. in Buffalo. The fact that this comparison relates to only two individual years and that complete returns of deaths of infants under one year of age may not always have been made, coupled with the fact that the number of infant deaths per 1,000 population under one year of age does not furnish as satisfactory a basis for the study of infant mortality as the number of such deaths per 1,000 births, tends to diminish somewhat the value of the figures given in

the table. Yet, in spite of these limitations, these figures, taken in conjunction with those previously given for Massachusetts and Boston, show that in all probability there has been a marked reduction in infant mortality in this country in recent years.*

The Decline in the Infant Mortality Rate Compared with that in the General Death Rate for All Ages. The extent of the decline in the mortality rate for infants under one year of age can not be fully appreciated until it is compared with the decline in the death rate for other age periods. The following table compares the decline in the infant mortality rate shown in preceding tables with the decline in the general death rate for all ages during the same periods:

PER CENT. OF DECREASE IN THE INFANT MORTALITY RATE PER 1,000 BIRTHS AND IN THE GENERAL DEATH RATE FOR OF ALL AGES PER 1,000 POPULATION BETWEEN 1881-85 AND 1891-95 AND BETWEEN 1896-1900 AND 1906-10, FOR THE PRINCIPAL FOREIGN COUNTRIES. (a)

Country.	Per Cent. of Decrease Between 1881-85 and 1891-95		Per Cent. of Decrease Between 1896-1900 and 1906-10	
	General Death Rate.	Infant Mor- tality Rate.	General Death Rate.	Infant Mor- tality Rate.
Hungary.....	3.9	—	10.4	6.8
Prussia.....	10.2	1.0	17.6	16.4
Italy.....	6.6	—	8.3	8.9
Servia.....	+15.2	+8.7	+35.6	3.1
Belgium.....	2.4	+4.9	+26.7	10.8
France.....	+0.4	+2.3	7.2	20.8
England and Wales.....	3.6	+7.9	16.9	25.0
The Netherlands.....	8.4	8.8	16.8	24.5
Switzerland.....	7.0	9.3	+30.4	19.6
Finland.....	7.7	10.5	8.4	15.8
Sweden.....	5.1	11.2	11.2	22.8
Scotland.....	3.1	+7.1	10.6	13.2
Denmark.....	+1.1	+2.2	16.5	18.2
Ireland.....	+2.7	+7.8	4.4	11.3
Norway.....	2.3	1.0	11.5	27.1
New Zealand.....	7.3	3.3	+1.0	12.5
The Australian Commonwealth.....	15.3	12.8	15.7	30.4

A plus sign (+) denotes an increase.

(a) Compiled from the Seventy Third and Seventy Fourth Annual Reports of the Registrar General for Births, Deaths, and Marriages in England and Wales for the years 1910 and 1911. The Twelfth Annual Report of the Bureau of the Census on Mortality Statistics for 1911 quotes in detail the general death rates from which the per cents. of decrease in this table were compiled.

* This is the conclusion arrived at in the Twelfth Annual Report of the Bureau of the Census on Mortality Statistics for the year 1911, p. 24, and expressed in the following words: "There has been a marked reduction in the infant death rate in recent years."

The first thing to be noted upon examination of the above table is the much greater per cent. of decrease in both the general death rate and the infant mortality rate in the last than in the first half of this period of thirty years. Thus, from 1881-85 to 1891-95 the infant mortality rate decreased in only 8 of the 15 countries for which rates could be obtained, while from 1896-1900 to 1906-10 it declined in every country included in the table. Moreover, the average per cent. of decrease for all countries in the latter period was twice as great as in the former. The same variation is also shown in the decline of the general death rate in the two periods but to a somewhat lesser extent.

By comparing the extent of the decline in the infant mortality rate with that in the general death rate it will be seen that in the first half of the period the greater decline occurred in the general death rate, while during the second half the greater decline occurred in the infant mortality rate. Thus, from 1881-85 to 1891-95, a greater per cent. of decrease in the infant mortality rate occurred in only 4 of the countries included in the table, while from 1896-1900 to 1906-10 a greater per cent. of decrease failed to occur in only 2 countries.

A similar comparison extending over the same periods can be made for Massachusetts, and it shows the same results. Thus, from 1881-85 to 1891-95, the general death rate for Massachusetts decreased 0.5 per cent. and the infant mortality rate increased 0.6 per cent., while during the period from 1896-1900 to 1906-10 the former rate decreased 10.5 per cent. and the latter 13.1 per cent.

That this greater decline in the infant mortality rate than in the general death rate during recent years is probably typical for this country is shown in the following table, which compares the per cent. of decrease between 1900 and 1911 in the general death rate and the infant death rate for the states included in the registration area in 1900:

PER CENT. OF DECREASE IN THE INFANT DEATH RATE PER 1,000 POPULATION UNDER 1 YEAR OF AGE AND THE GENERAL DEATH RATE FOR ALL AGES PER 1,000 POPULATION BETWEEN 1900 AND 1911, FOR THE STATES INCLUDED IN THE REGISTRATION AREA IN 1900. (a)

State.	General Death Rate.	Infant Mortality Rate.
All States (b)	14	19
Rhode Island.	25	30
Maine.	13	23
New Jersey.	17	21
New York.	14	19
Massachusetts.	17	19
Connecticut.	15	17
Vermont.	9	16
New Hampshire.	13	13
Michigan.	11	8

(a) Twelfth Annual Report of the Bureau of the Census on Mortality Statistics for the year 1911, pp. 22 and 25. The general death rates are "corrected on the basis of the standard million of England and Wales."

(b) District of Columbia included in both rates and Indiana in the general death rate in addition to the states mentioned.

During this period of 11 years a greater decline in the infant death rate than the general death rate for all ages occurred in all of the 9 states included in the above table except 2, New Hampshire and Michigan. In the former the decline in the two rates was exactly equal. All evidence seems to point, therefore, to the conclusion that the decline in the infant mortality rate during the last 10 or 15 years has been greater than that in the general death rate for all ages.

Before leaving this subject it will be advisable to compare the decline in mortality by age. This is possible from the figures given in the following table comparing the per cent. of decrease in the death rate for persons of different ages between 1900 and 1911 for the group of registration states as constituted in 1900:

PER CENT. OF DECREASE IN THE DEATH RATE PER 1,000 POPULATION FOR CERTAIN AGE GROUPS BETWEEN 1900 AND 1911, FOR THE STATES INCLUDED IN THE REGISTRATION AREA IN 1900. (a)

All ages. 13		
Under 1 year.	22	25 to 34 years. 23
1 to 4 years.	35	35 to 44 years. 9
5 to 9 years.	32	45 to 54 years. 3
10 to 14 years.	27	55 to 64 years. +4
15 to 19 years.	27	65 to 74 years. +3
20 to 24 years.	26	75 years and over. 0

A plus sign (+) denotes an increase.

(a) Twelfth Annual Report of the Bureau of the Census on Mortality Statistics, p. 22.

An examination of these figures shows that the death rate for all age groups under 55 decreased between 1900 and 1911. The greatest decrease was for the age group 1 to 4 years, the per cent. of decrease falling off with each succeeding age group until the period from 55 to 64 years was reached, this and the next group showing a small increase. The death rate above 75 years was practically the same in each period. The per cent. of decrease in the mortality of the first year of life was noteworthy (22) but it was exceeded by that of the years of both childhood and adolescence, being about equal to that for the age group 25 to 34 years and greater than that for all succeeding groups.

It has thus been shown that since 1881 the rate of infant mortality has been declining in practically all European countries for which statistics are available, in the Australian Commonwealth and New Zealand, and in Massachusetts and Boston in this country. This decline in infant mortality has been especially marked in the last twelve or fifteen years during which period it has practically everywhere exceeded the decline in the general death rate for all ages. It has also been shown that between 1900 and 1911 a marked decline in the infant death rate per 1,000 population under one year of age occurred in the states and large cities of the registration area. Here, too, the decline in the infant death rate was with one or two exceptions found to be greater than that in the general death rate. On comparing the per cent. of decrease in the death rate for infants under one year of age with that for other ages it was found that the decline in infant mortality was less than that for children or young persons under 25 years of age but about equal to that for persons in the age group 25 to 35 years and greater than that for persons over 35. It appears, therefore, that the decline in the infant death rate has in general been greater than the decline in the adult death rate; but the decline in the infant death rate has not been as great as the decline in the death rate for persons in the years of childhood and adolescence.